

1-9. (Cancelled)

a computer and a set of operating instructions resident in computer software of the computer for operating:

a set of reactant dot applicator pins;

an xy positioner operatively connected to the reactant dot applicator pins, wherein said reactant dot applicator pins create a microarray of liquid hydrophilic reaction dots on a planar surface, each of said reactant dots adhering to said planar surface in a non-covalent manner and having a diameter ranging from 10 microns to 100 microns and being separated by a center to center distance of 50 microns to 500 microns, and having one or more constituents therein; and

a separate device for biological sample aerosol mist generation, wherein the aerosolized biological sample mist droplets are applied simultaneously to said microarray by said separate device for sample aerosol mist generation, without forming a wetting film, for computer-enhanced assay of any reaction between the sample mist droplets and said constituents.

11. (Previously presented) The assay system of claim 10, wherein said device for biological sample aerosol mist generation comprises one or more subcomponents and wherein said operating instructions send signals, via serial or parallel port, to start, to stop, to establish operating set points and to control said one or more subcomponents of the device, whereby each of said one or more subcomponents may have an internal or external standing controller or driver.

12. (Currently amended) The assay system of claim 11, wherein said one or more subcomponents further comprises at least one device selected from the group consisting of multiple positive displacement microsyringe pumps, pressure nozzles, ultrasonic nozzles, ink-jet printheads, position-actuated ink-jet printheads, surface-actuated ink-jet printheads, fluid-

contacting or ~~fluid~~fluid-noncontacting ultrasound transducers; gas flow meter and controller; and exhaust and filtration fan.

13. (Canceled)

14. (Currently amended) The assay system of claim ~~13~~12, wherein said ~~pins~~ microsyringe pumps deliver samples to said microarray at a constant flow rate.

15. (Original) The assay system of claim 10, wherein said device for aerosol generation is an ultrasonic nebulizer.

16-18. (Canceled)

19. (Previously presented) The assay system of claim 10, wherein said reaction dots comprise a carrier selected from the group consisting of dextran, pluronic acid, carbohydrates of the pentose, ribose or hexose families, polysaccharides, polyethylene glycol polymer, 1,2-ethanediol, 2,3-butanediol, and 1,2,3-propanetriol (glycerol).

20. (Previously presented) The assay system of claim 19, wherein said reaction dots further comprise enzyme reaction components selected from the group consisting of cofactors, inhibitors, antibodies, activators, and buffer elements.

21. (Previously presented) The assay system of claim 19, wherein said reaction dots comprise a biological molecule or fraction selected from the group consisting of proteins, peptides, nucleic acids, enzymes, antibodies, lipids, cell lysates, and vesicles.

22. (Previously presented) The assay system of claim 19, wherein said reaction dots further comprise fluorogenic substrates, chromogenic substrates, or other reporter substrates.